February 7, 2017

Four Corners Power Plant San Juan River Intake Pumping Plan Proposal

Reasonable and Prudent Measure #2 of the Biological Opinion for Four Corners Power Plant and Navajo Mine Energy Project states:

> *Project Proponents will develop and implement a Pumping Plan to reduce the magnitude and types of entrainment of Colorado pikeminnow and razorback sucker. The Pumping Plan will optimize avoidance of entrainment of larvae and impingement of larger fishes through measures that are deemed feasible without altering the current operating configuration at the river pump station.*
>
> *a. The Pumping Plan measures shall be developed with the oversight of OSMRE and the approval of the Service.*
>
> *b. The final Pumping Plan shall be implemented within 2 years of issuance of a Record of Decision.*

APS investigated various options to minimize entrainment and impingement of endangered fish at the Four Corners Power Plant intake on the San Juan River*. As a result APS proposes the following Pumping Plan:

1. Reduce intake velocity by connecting the pump train sumps

   The Pumping Station has two independent pump trains with separate intake screens and suction sumps. APS intends to connect the sumps. That will reduce the screen approach and through screen velocities by up to 50% during one train operation. The intake screen velocities will remain unchanged during two train operation. However, the River Station will operate in one train operation the majority of the time.

2. Strategic pump outages

   The pump trains will not be operated during a two week period in the fall starting when Colorado pikeminnow stocking occurs upstream of the APS pump station. Additionally, if and when USFW determines that Colorado pikeminnow are spawning upstream of the APS pump station, APS and USFW will work together to establish an optimum two week pump train outage when larvae are likely to be present.

3. Existing intake screen opening size selected as optimal for pump station

   An engineering investigation indicated that reducing the current screen size openings would not be beneficial. Reducing the opening size would increase through screen velocity, counteracting the velocity reduction obtained by connecting the sumps. Additionally, smaller screen openings would result in more rapid screen blockage, causing the through screen velocity to further increase. As such, the existing intake screen opening was selected as optimal for the pump station.

* *See* Four Corners Power Plant San Juan River Pumping Plan Presentation to USFW and OSM on December 6, 2016